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IRON AGE

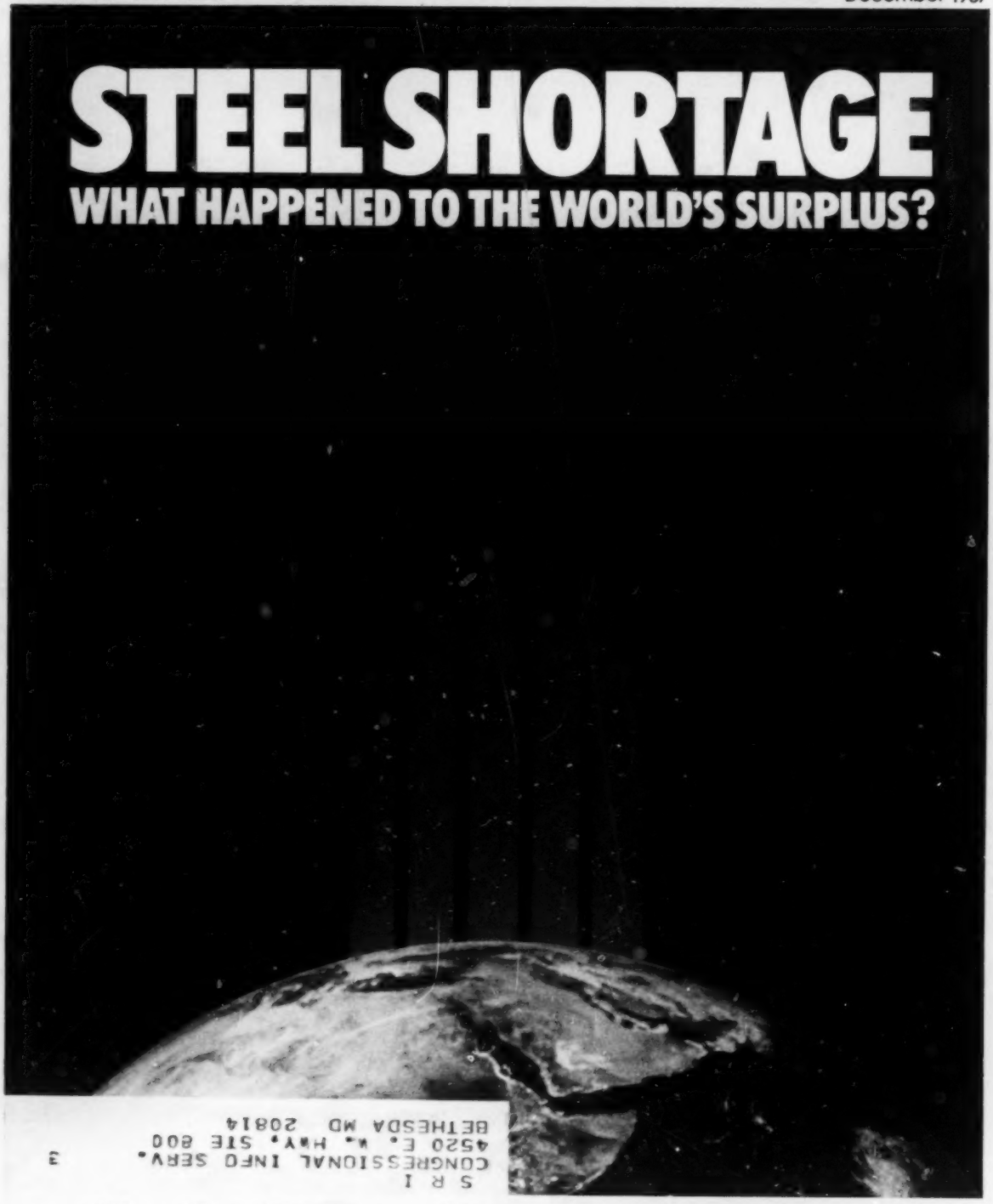
THE MANAGEMENT MAGAZINE FOR METAL PRODUCERS

A Fairchild Business Publication

December 1987

STEEL SHORTAGE

WHAT HAPPENED TO THE WORLD'S SURPLUS?



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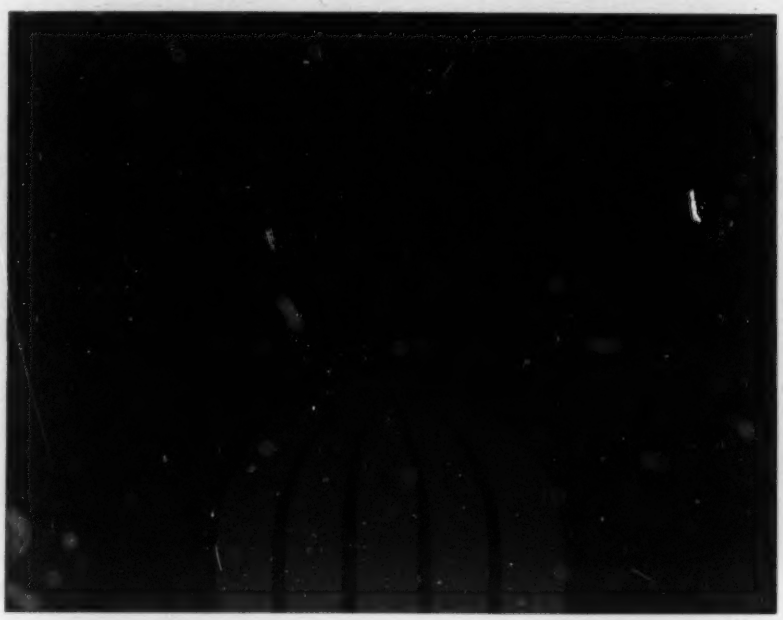

In a world overflowing with steel capacity, supply has dried up.

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LETTERS

Tuscaloosa Steel

Thank you for the excellent article that George McManus wrote on Tuscaloosa Steel Corp. ("In the right place at the right time," *Iron Age*, June 1987, p. 23.)

Your article correctly identifies O'Neal Steel as an equity participant in the mill and a large user of the product. However, it failed to make clear that O'Neal is also the primary marketing agent for Tuscaloosa Steel and, in that capacity, is responsible for the sale of the majority of our product, both coil and plate.

John E. Thomas
Chief Executive Officer
Tuscaloosa Steel Corp.

Matching Wits

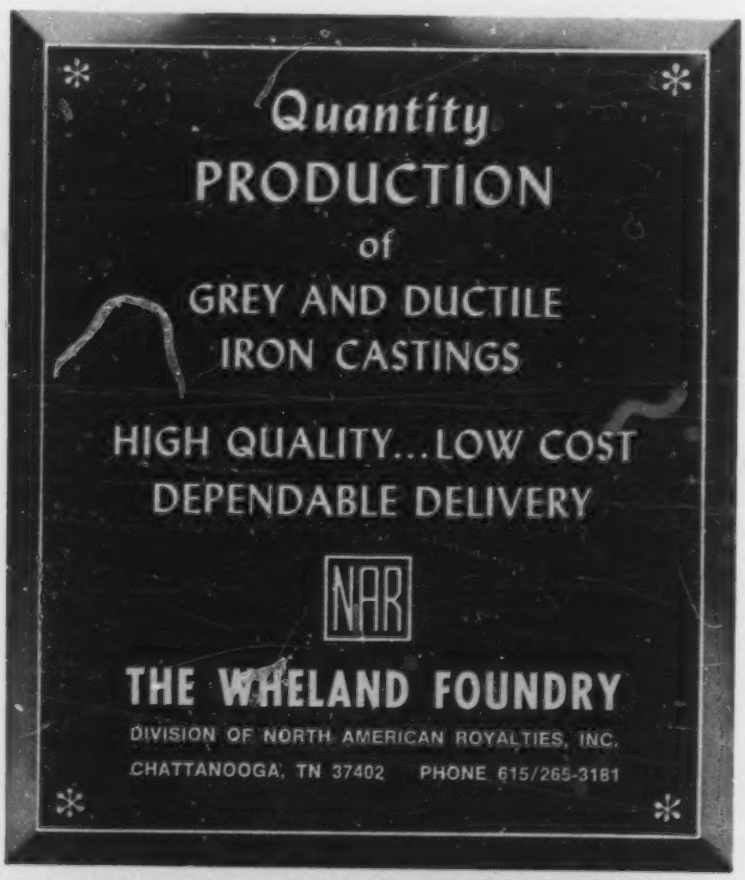
Hey this smacks of fun. Matching my whits with the wits of the top bananas and claim at the top ("1995: Match your wits with those at the top," *Iron Age*, October 1987, p.5.)

Some of these questions really needed some heavy thinking, especially No. 2. No wonder these head honchos needed another head for help. With the bull at the stock market taking its worse stumbling, I think a baker's dozen would be apropos. Like: Do the ledgers show any of the head honchos about ready to leap from the ledges? "Heck NO, hold on—let the other guy go."

Being a closet optimist, I figure with all the good things, especially our freedom to work, weighed against all the bad things, especially the uneducated masses; we still have a preponderance of wealth of human resource to carry us over the rough roads to a smoother and better tomorrow—1995.

William T. Bystry
Fallston, Md.

Letters, preferably typewritten, should be addressed to Editor, Iron Age, 201 King of Prussia Road, Radnor, PA 19089. Unsigned letters are not published, but names will be withheld on request.



IRON AGE
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Editorial Office:
201 King of Prussia Road
Radnor, Pa. 19089
Telephone: (215) 964-4307

Michael Marley
Editor
George J. McManus
Steel Editor
Mary Beth Dougherty
Associate Editor
Naughton Studios
Art Director
Julie Luciano
Production Manager

Contributing Editors
Robert R. Irving
Materials Editor
James B. Pond
Machine Tool Editor
Robert E. Harvey
Automation/Systems Editor
Bryan H. Berry
Automotive Editor

Bureaus:
CHICAGO 60603: 11 E. Adams St., 312-663-3500
PHILADELPHIA 19089: 201 King of Prussia Road, Radnor Pa., 215-964-4307
PITTSBURGH 15222: G.J. McManus, 1520 Park Building, 412-281-1830
WASHINGTON 20005: 1333 H. St., N.W., Suite 570, 202-682-3200

James M. Lamoree
Publisher
Gene Beaudet
Associate Publisher/Editorial

Fairchild Publications
A Capital Cities/ABC, Inc., company
7 E. 12th Street
New York, NY 10003
(212) 741-4000

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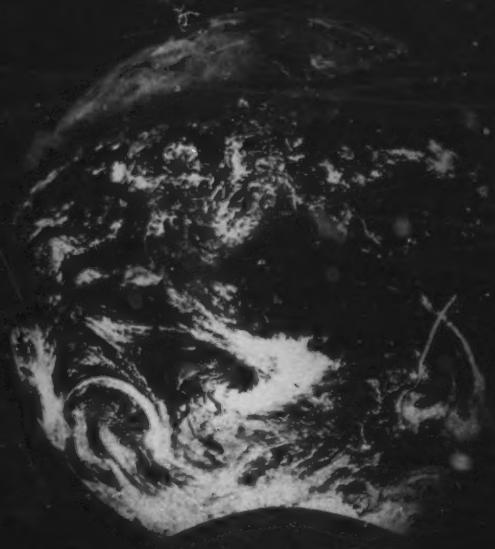
STEEL SHORTAGE

WHAT HAPPENED TO THE WORLD'S SURPLUS?



WESTERN WORLD STEEL PRODUCTION

	1974	1980	1985	1990 E
W. Europe	203	223	195	170/180
N. America	156	152	139	110/115
Japan	126	142	125	110/115
Dev. countries	33	60	86	110
Others	15	18	16	17
Total	553	595	561	517/537

On paper, the world has plenty of steel.

According to the International Iron & Steel Institute (IISI), the Western World will use a little less than 440 million tons of steel in 1987 and no more than that for the rest of the decade.

IISI looked for steel capacity to stay well over the usage rate.

"Total capacity in 1990 of between 517 million and 537 million metric tons is ample to supply Western World needs of around 440 million tons," said Lenhard Holschuh, secretary general of IISI.

Others concurred. "We've all seen some signs of improvement in the world steel picture, but there is still a crisis with a 200-million-ton surplus," said Thomas C. Graham, president of the USS division, USX Corp., and also chairman of the American Iron & Steel Institute.

While these estimates were being aired at the recent Washington meeting of IISI, a rapid change was taking place in the real world of steel. In the U.S., the long term steel surplus suddenly had given way to a deficit. Steel mills were struggling to keep up with demand.

"If anyone tells you they're not solidly booked for the rest of the year, they're lying," said the president of a large American mill.

The world steel market was also undergoing a significant change. There might still be a surplus, but for a variety of reasons, U.S. buyers no longer had access to unlimited quantities of foreign steel.

The new market balance was partly due to unexpectedly brisk demand. Mr. Holschuh noted that estimates made a year ago called for 1987 world steel consumption of 721 million tons. He said the most recent returns indicated 739 million tons would be used this year.

Even as Mr. Holschuh spoke in October, a rising market was making his projection obsolete. His latest forecast assumed that demand for steel in the U.S. would be down 3 pct this year. That was in line with domestic estimates made only a month or two ago.

With no slowing of orders, however, domestic officials were busy revising their estimates upward. Again. By the fourth quarter, it was clear steel shipments in the U.S. would be up 3 million to 4 million tons from the 70 million tons of 1986.

Japan's steel production has risen to an annual rate well over 100 million tons. The Japanese are reportedly getting some hefty sheet orders from Russia. The British steel industry is operating at a high level "and operating profitably."

'It's important that steelmaking be an economic enterprise and not a social or political one.'

David M. Roderick, chairman
USX Corp. and IISI

The early estimates of 1987 demand were too pessimistic, but what has really become suspect are estimates of steel capacity.

The U.S. supposedly has nearly 112 million tons of raw steel capacity. In 1984, when steel shipments were close to the expected 1987 tonnage, only 92 million tons of raw steel were required.

There should be a comfortable supply cushion, but as has been noted, U.S. mills have been unable to satisfy 1987 demand. Mill officials insist the supply problems are due to a number of temporary factors. The long USS strike emptied pipelines. Service centers allowed their inventories to run down. There have been unusual production snags.

Once normal conditions have been restored, said officials, the market will sag back to its old rut. That may be, but six months ago people were predicting an early end to the steel pinch. It hasn't happened yet. Well into the fourth quarter, there was no sign of a slowdown, and it hasn't been shown that the domestic industry has any spare capacity.

There hasn't been a practical test of how much capacity was left by what Mr. Graham called the Draconian cutbacks of the last six years. Official ratings can't measure the effect of wholesale slashes in people, facilities, and materials.

With regard to materials, a critical limitation may be scrap supply. In the most recent year reported, electric furnaces produced nearly 160 million tons or 25 pct of the world's steel supply. Nearly all of this came from scrap.

In the summer of 1987, the U.S. scrap supply suddenly tightened. An auction market developed, and mills were bidding as high as $160 a ton for industrial scrap. There were reports that one large domestic mill was trying to bring scrap in from Great Britain.

Coke could become another critical material. The deterioration of coke ovens has left a number of mills entirely dependent on outside supply. Weirton Steel Corp., McLouth Steel, and Sharon Steel Corp. were among those operating without coke batteries.

Endangered Species

In the U.S., blast furnaces were moving toward the endangered species class. There are estimates that only about a third of the rolling mills in the country are capable of delivering prime quality.

Finally, there has been the subtraction of people. Steelmaking isn't a push-button operation yet, and the 270,000 steel people turned loose since 1979 took with them a vast amount of experience and competence.

According to IISI, Western World raw steel capacity fell from 595 million tons in 1980 to 561

million tons (metric) in 1985. Another 30 million to 40 million tons will be subtracted by 1990, said IISI. (See chart, p. 14.)

In both periods, the net changes understate the violent contraction in much of the industrial world. Capacity increases of developing nations have partly offset the large cuts of developed countries.

As an example, the 50 million ton reduction in American steel potential since 1977 exceeded the net reduction of the whole world over the last seven years.

No one should be under the illusion that the retired capacity can be quickly activated and restored if needed. The physical magnitude and the finality of the steel shrinkage were brought out at IISI by J. Bruce Johnston, executive vice president of USX Corp.

In recent years, said Mr. Johnston, USX had complete plant shutdowns at Geneva Works, Texas Works, Homestead Works, Duquesne Works, Youngstown Works and 15 others.

At the plants that remain, numerous facilities have been retired. Sixteen coke batteries, 15 blast furnaces and a number of sinter lines were among the casualties. This deletion of ironmaking facilities was representative of the domestic trend and helped explain why the scrap supply was over subscribed.

'Total (steelmaking) capacity in 1990 (will be) ample to supply Western needs.'

Lenhard Holschuh, secretary general IISI

The furnaces are gone, and so are the people who ran them. "As the decade began," said Mr. Johnston, "U.S. Steel had an active steel work force of 100,068 people. On June 1, 1987, our total active steel work force, including management, was 19,657.

"We reduced our steel management work force from 9,600 in 1980 to 2,900 on June 30, 1987," said Mr. Johnston. "For all remaining executives, managers, and administrators, we made extensive salary and benefit reductions."

Hourly benefits were reduced in two successive labor agreements. "USS hourly contract labor costs and USS unit labor costs will be meaningfully lower on Feb. 1, 1991 than they were at the outset--March 1, 1983," said Mr. Johnston.

Contributing to the unit cost reduction was a dramatic productivity improvement. U.S. Steel's labor content fell from 10.8 manhours a ton in 1982 to 3.0 manhours a ton in 1987.

One effect of all the measures was to reduce the capacity of USS from nearly 38 million tons in 1977 to 18 million tons in 1987. The downsizing left the company with far more retired than active workers.

"In this decade," said Mr. Johnston, "our USX pension rolls have grown by a net 43,000 new retirees to a current total of 124,000 pensioners. We have paid out in pensions during this period over $7.36 billion."

USX has repeatedly contrasted its own ample funding of pension plans to the deficits of other large mills. It's no secret that any government payments to make up the deficits are strenuously opposed by David M. Roderick, chairman of USX Corp. and also IISI chairman.

"It's important that steelmaking be essentially an economic enterprise and not a social or political one," said Mr. Roderick. "We must not subsidize losers, for in doing so, it distorts the free market system."

It appeared that the Pension Benefit Guaranty Corp. was leaning toward this view. The agency has declined to take over the pension obligations of one bankrupt corporation—Eastmet—and has returned the pension plans of LTV Corp. to that company.

If the government stays with a tough policy on assistance to the steel industry, bankrupt companies could be forced to liquidate capacity. On the other hand, if the government refuses to give the help some mills are seeking on exit costs, the effect could be to preserve capacity that should be retired.

A Weaker Dollar

In the first six months of 1987, steel imports from both Europe and Japan were down 15 pct.

The declines weren't due to voluntary restraint agreements. Japan's steel quota is 5.8 pct of the market, and Japanese shipments were only 4.6 pct of the market in the first half. European shipments were 5 pct of the market compared to a quota of 6.2 pct.

These numbers strongly suggest that the weakening of the dollar has made the U.S. market less attractive and less accessible to foreign producers.

That is true, said Martin Feldstein, Harvard economics professor. The steel import slide is part of a general currency-based trade pattern, Mr. Feldstein indicated at the recent IISI meeting.

"For the last three quarters," he noted, "the trade deficit in constant dollars has actually declined. It has now fallen 20 pct from its peak three quarters ago. I'm convinced the decline is going to continue in the months and years ahead.

"The basic reason is that the dollar began to fall in February of 1985. It has now come back almost to the level where it was when the rise began in 1980.

"I emphasize the dollar as the critical reason for the correction in our trade imbalance because I believe it was the dollar that caused

the U.S. trade problem and it is the change in the dollar that ultimately is going to solve our trade deficit."

Mr. Feldstein rejected the contention that the deficit was caused by the unwillingness of people at home and abroad to buy American products. "Even before the significant fall of the dollar, the U.S. exported manufactured products valued at $150 billion," he said. "Seventy percent of the manufactured products purchased by Americans were made in the U.S.

"As the dollar comes down further, those market shares both at home and abroad for U.S. manufactured products will continue to increase until our trade deficit is eliminated. I am talking about what I think the markets are going to do whether we like it or governments like it.

"I think there is no excuse for intervention by the American government or even more so for a distortion of monetary policy in an attempt to change the direction of the dollar.

"Why do I think the dollar is going to come down? Fundamentally, because the current accounts deficit that would be associated with persistence of the dollar at its present level is simply not financable.

"It's not a question of some historic standard... nor is it a question of purchasing power parity. The real issue is whether the current accounts deficit that results from the current level of the dollar can be financed by a flow of capital from the rest of the world.

"I believe it's already clear that it cannot be. We're already seeing that private investors are financing less than half the current accounts deficit. Since January, $70 billion of dollar obligations have been purchased by the central banks of the world, primarily the Bank of Japan.

"(The dollar) is being supported by only the willingness of central banks to purchase. I do not believe that's a sustainable situation. The pressure of net selling by private investors will be too great for the central banks to resist.

"How far is the dollar going to have to fall...? To shift from today's deficit to a trade balance would require a further 15 pct decline of the dollar.

"Because of the higher rate of inflation in the U.S. than Japan and Germany, the dollar must fall further.... Roughly speaking, there's about a 3 pct difference between the inflation rates. Looking out over the next five years, we can see a real adjustment of 15 pct plus 3 pct a year or another 15 pct.

"As I look out five years, I see a correction bringing the dollar down (from 140 yen) to about 100 yen."

Mr. Feldstein discussed other proposals for balancing trade. Faster growth abroad would being favorable effects "of a very small magnitude," he said.

A domestic recession is "undesirable in its own terms" and wouldn't help much. "After all we only import 15 pct of our total spending."

Mr. Feldstein was also pessimistic about the cure-all advanced by business people and many others. "A reduction in the budget deficit per se would have only a trivial effect on the size of the U.S. trade imbalance."

If the official figures are right, the world steel surplus is even greater than it appears.

World capacity and production statistics are given in raw steel terms. With more than 70 pct of the Free World's steel continuously cast, the higher yields mean that raw steel tons understate the amount of finished steel available. This question is being addressed by IISI.

STEEL CONSUMPTION
INDUSTRIALIZED COUNTRIES
(In Millions of Metric Tons)

	Average 1984/1986	1990 F	1995 F
N. America	121	114	109
EEC	102	95	92
Japan	73	69	65
Others	34	34	35
Total	330	312	301

Continuous Casting

Apart from statistics, continuous casting is important as a key element in the transition of steelmaking from a batch to a continuous flow system. At all the big carbon steel mills, successive heats flow through the casters in nonstop sequences.

At a number of mills, the cast slabs and billets are being fed directly and continuously into rolling mills. "This process was commercialized at the Sakai works of Nippon Steel in 1981 and at the Fukuyama Works of Nippon Kokan in 1984," said Tomokatsu Kohtani managing director and general superintendent, Yawata Works, Nippon Steel Corp.

"The world's first attempt at the direct connection of a continuous caster to a remote hot strip mill was started at the Yawata Works of Nippon Steel in June of 1987 and is now successfully working," said Mr. Kohtani.

In Japan, Europe, and the U.S., pickling, tandem rolling, annealing and tempering are being tied

STEEL CONSUMPTION
DEVELOPING COUNTRIES
(In Millions of Metric Tons)

	Average 1984/1986	1990 F	1995 F
Latin America	28	33	41
Asia	52	63	79
Africa	12	13	14
Middle East	17	18	20
Total	109	127	154

together in continuous systems.

In their refining operations, the Japanese are moving to separate rather than unify different steps. "Conventional oxygen steelmaking combines desiliconization, dephosphorization, decarburization and other refining functions in one process step," said Mr. Kohtani.

'A reduction in the budget deficit would have only a trivial effect on the trade imbalance.'

Martin Feldstein, economics professor
Harvard University

"The new process separates the different refining steps," he said. "A hot metal pretreatment unit and a secondary refining unit are arranged before and after the basic oxygen furnace respectively."

U.S. producers, who work with low phosphorous ores, haven't adopted extensive hot metal pretreatment, but they are applying ladle refining on a large scale. The new trend is toward vacuum treatment. This can produce low carbon steel and facilitate the use of continuous annealing.

All the industrial countries are combining bottom blowing and bottom stirring with top blowing of oxygen vessels.

Scrap melting capabilities of oxygen furnaces are being increased in a number of ways. The KMS process of Klockner injects coal through bottom tuyeres and makes use of post combustion. The ALCI process of Arbed uses lances for coal injection.

Use of the electric furnace for carbon steels continues to grow. Ultra-high power, water cooling, continuous charging, eccentric bottom tapping are some of the advances being applied.

In the developing nations, electric steelmaking is frequently combined with direct reduction. These nations have limited scrap supplies, and many are in the Equatorial belt that is rich in oil and gas.

At the IISI meeting there were reports on direct reduction and electric furnaces by A.T. Acevedo, managing director of Argentina's Acindar SA, and by Tachia Jooji, general manager and CEO of Nigeria's Delta Steel Co., Ltd.

The trials and tribulations of steelmaking in a developing country were noted by Mr. Jooji. He referred to the low utilization rate of the direct reduction plant.

"This arises from the scarcity to total lack of such basic steelmaking items as refractories," he said. "Moreover, it has not been possible to ensure a steady supply of iron ore, electrodes and other consumables because of poor financing and stringent exchange control.

"Power outages have been one of the most agonizing handicaps."

The technology for stainless steel was discussed at IISI by Richard P. Simmons, chairman of Allegheny Ludlum Corp.

"For the balance of this century," said Mr. Simmons, "I believe that the technologies which are already in place, with certain exceptions, will be the foundation on which further technology improvements will be made."

"Most important of the new technologies is the strip casting process," said Mr. Simmons.

By George J. McManus

Korea: 'We Have a Lot of Industry Clamoring For Our Steel'

In 1988, the Republic of Korea will be the scene of the summer Olympics in September and the annual meeting of the International Iron & Steel Institute in early October.

These events focus attention on a dynamic economy and a dynamic steel industry. The vitality of both shows up in 1987 Korean steel output that will be more than 16 million metric tons. That will be nearly double the steel volume at the start of the decade.

"We're running at full capacity," said Myung-Sik Chung, president of Pohang Iron & Steel Co., Ltd. "The Korean economy is very strong. Steel consumption is rising at a very fast rate.

"We have a very strongly growing automobile industry," said Mr. Chung, who received a graduate degree in the U.S. "We have a thriving shipbuilding industry—the world's largest shipbuilding industry. We have a lot of industry clamoring for our steel."

There is good reason for the clamor. "Our domestic steel price is the lowest in the Free World," explained Mr. Chung.

Going with the price is an hourly labor cost well below the $20 plus of U.S. mills. "It's more like $4 an hour," said Mr. Chung. "That doesn't include all fringe benefits. They are fairly difficult to calculate."

Korea exports about 25 pct of its steel, with Japan, the U.S. and Asia providing markets. The net outflow is less than 25 pct. "We normally import about 10 pct of our steel," said Mr. Chung.

He was enthusiastic about prospects for USS-POSCO, the $400-million joint venture with USX Corp. The money is going to an ultra modern cold finishing complex at Pittsburg, Calif. When finished in 1989, the new facility is scheduled to receive more than 1 million tons of hot bands a year from Korea.

The voluntary restraint agreements that limit steel imports from Korea and other nations are due to expire in 1989, but U.S. mills are now pushing for a new restraint program. This could complicate the supply arrangement for USS-POSCO. "We're hopeful something can be arranged outside the VRAs," said Mr. Chung. "It will benefit both the U.S. and us."

3RD QUARTER EARNINGS
BACK IN THE BLACK

Brisk demand provided long-awaited price relief for the steel and nonferrous metals industries, and dramatic rebounds from the red ink of previous quarters.

For steel mills, the third quarter may have been a case of too much of a good thing.

The mills clearly had too much demand for the available supply. By the end of the quarter, major producers were way behind on their deliveries and there was no sign demand was easing.

The supply pinch was partly a matter of brisk ordering in what was expected to be a slack period. Steel shipments in the third quarter were up about 3 million tons from the same 1986 period.

The sustained market strength caught steel producers off balance, and it's possible supply problems will disappear when there has been time to gear production up to a higher level.

That could be, but people are starting to wonder if the steel industry hasn't gotten rid of too much capacity. Having suffered from a glut the last six years, steel producers probably aren't worrying about a deficit now. The tight supply has made it possible for industry to finally get some significant price relief.

There are, however, some worrisome aspects to the current market balance. Increased activity has sent scrap prices zooming. This is hurting all mills, but it is particularly painful for the electric furnace companies.

And the increases in steel prices may have contributed in some small way to the Federal Reserve's abortive exercise in monetary restraint. Always ready to tilt the inflation windmill, the Fed gave interest rates an upward nudge. The banks chimed in with several more nudges and the stock market collapsed.

The collapse came with a number of steel pension plans already

underfunded. The stock slide could aggravate that condition to a critical extent.

All this may come under the head of borrowing trouble. Most steel companies made money in the third quarter. The industry may be moving out of its long recession.

With regard to pensions, one group of retirees received reassuring words from David M. Roderick, chairman of USX Corp. "We continue to be overfunded even at these depressed market levels," said Mr. Roderick. "Our pension fund is healthy."

He said the industry still has excess capacity, and he said USX has had no second thoughts about recently retired facilities. It was interesting, nevertheless, that he emphasized capacity increases rather than facility cutbacks.

"The continuous caster and hot strip mill improvements at Fairfield scheduled to come on line in December 1988 will actually increase our raw steel capacity by 10 pct," said Mr. Roderick.

USX had a net profit of $140 million in the third quarter. That compared with a big loss in 1986, when the USS division of USX was hit with a strike in August.

Bethlehem Steel Corp. went from a loss of $71 million in the third quarter of 1986 to a profit of $30 million in the third quarter of 1986.

National Steel went from a loss of $18.6 million in the third quarter of 1986 to a profit of $12.4 million in the third quarter of 1987.

"The substantial improvement in National's third quarter performance over that of a year ago is partly the result of vigorous market demand," said Howard M. Love, chairman of National.

Higher prices, cost cutting and reduced import competition also helped, said Mr. Love. Over the first nine months, National's production and shipments were the highest in six years. Like most other mills, the company ran into problems in maintaining the higher operating level.

"We were hurt early in the third quarter by an outage at the Great Lakes Division," said Mr. Love.

Also hurt by production snarls was Inland Steel Industries, Inc. A planned reline of Inland's big No. 7 blast furnace was partly responsible for holding Inland's third quarter earnings to $5.6 million. That was up from a loss of $4.7 million in the third quarter of 1986, but it was down from a profit of more than $17 million in the second quarter of 1987.

Weirton Steel Corp. continued to make a strong case for employee ownership. Weirton earned more than $33 million on sales of $329 million in the third quarter. A little more than $11 million of the profit was distributed to employees.

(Sales and earnings table appears on p. 34; story continues on p. 36.)

EARNINGS

STEEL: BACK ON THE PLUS SIDE

THIRD QUARTER PROFIT REPORT—1987 (In Millions of Dollars)

		EARNINGS			SALES		
	E/S	3rd Q 1987	3rd Q 1986	Pct Change	3rd Q 1987	3rd Q 1986	Pct Change
USX	3.6	140.0	(183.0)	–	$3,860.0	$3,343.0	+16.0
LTV	6.3	109.7	(2,078.7)	–	1,753.8	1,730.7	+1.3
BETHLEHEM	2.6	30.4	(71.3)	–	1,156.5	1,032.9	+12.0
INLAND	0.7	5.6	(4.7)	–	844.9	785.7	+8.0
ARMCO	3.7	25.8	(59.0)	–	692.5	633.2	+9.4
NATIONAL	2.0	12.4	(18.6)	–	622.8	531.3	+17.0
TOTAL	3.6	323.9	(2,415.3)	–	8,930.5	8,056.8	+11.0
WEIRTON	10.2	33.6	11.1	+202.0	329.6	295.1	+12.0
CYCLOPS	1.6	4.5	–	–	271.0	–	–
WHEEL-PGH	11.0	25.8	19.2	+34.0	237.8	228.8	+4.0
NUCOR	5.7	12.7	13.9	-9.0	221.9	195.7	+13.0
ALLEG. LUD.	4.1	8.6	–	–	209.1	–	–
LUKENS	4.6	6.1	1.8	+242.0	131.1	101.9	+29.0
CARPENTER	1.8	2.1	1.1	+91.0	115.2	117.4	-2.0
FLORIDA	4.3	4.9	5.8	-16.0	113.7	87.1	+31.0
NORTHWEST*	1.1	1.2	2.1	-43.0	107.6	95.2	+13.0
ACME	2.3	1.9	(15.1)	–	83.8	58.4	+44.0
QUANEX*	8.0	6.7	(3.7)	--	83.3	75.6	+10.0
BIRMINGHAM	6.5	5.3	2.6	+100.0	80.6	44.3	+82.0
LACLEDE	1.3	0.9	1.1	-21.0	66.1	60.3	+10.0
CF&I	–	(4.7)	(11.7)	–	60.9	42.1	+45.0
CSC	–	(0.3)	(5.0)	–	43.8	33.9	+29.0
EASTMET	1.6	0.5	(3.8)	–	30.1	19.9	+52.0
NEW JERSEY	3.4	0.7	4.1	-83.0	20.5	31.7	-35.0

( ) Indicates a loss *Quarter ended July 31, 1987

NONFERROUS: A NEW LUSTER

THIRD QUARTER PROFIT REPORT—1987 (In Millions of Dollars)

	EARNINGS			SALES		
	3rd Q 1987	3rd Q 1986	Pct Change	3rd Q 1987	3rd Q 1986	Pct Change
ALCAN	$122.0	$62.0	+97.0	$1,707.0	$1,482.0	+15.0
ALCOA	109.1	34.1	+220.0	1,382.0	1.098.0	+26.0
AMAX	176.2	2.6	+6677.0	872.0	270.0	+223.0
ASARCO	227.5	17.6	+1193.0	322.1	252.7	+28.0
BATTLE MOUNTAIN	12.1	6.3	+93.0	31.6	23.0	+37.0
BRUSH WELLMAN	4.3	5.7	-25.0	72.6	57.6	++26.0
COMINCO	7.0	(13.9)	–	208.1	216.3	-4.0
CYPRUS MINERALS	8.5	(9.5)	–	213.8	205.8	+4.0
ECHO BAY	13.6	6.3	+116.0	56.7	30.4	+87.0
ENGELHARD	14.7	12.2	+21.0	612.3	568.3	+8.0
FALCONBRIDGE*	17.0	6.0	+183.0	329.0	279.0	+18.0
HECLA MINING	9.6	(2.0)	–	30.1	16.0	+88.0
INCO	41.4	3.0	+1280.0	415.0	306.0	+36.0
INSPIRATION	8.4	4.6	+82.6	234.9	208.6	+12.6
KAISERTECH	13.4	(3.1)	–	523.1	525.0	–
LORNEX MINING*	11.1	10.3	+8.0	52.1	51.4	+1.0
NEWMONT MINING	21.4	46.0	-54.0	127.4	86.7	+47.0
NORANDA*	89.5	4.7	+1804.0	1,857.7	1,483.1	+25.0
OREMET	(0.3	(0.2)	–	12.7	8.8	+44.0
PHELPS DODGE	58.2	11.1	+424.0	377.4	188.0	+100.1
PINE POINT MINES*	10.6	5.2	+104.0	31.9	25.5	+25.0
REYNOLDS METALS	62.5	19.7	+217.0	1,110.9	921.5	+21.0
RIO ALGOM*	15.1	21.1	-28.0	352.1	337.5	+4.0
SOUTHWIRE	4.9	(6.1)	–	184.5	135.8	+36.0
VULCAN MATERIALS	38.7	36.8	+5.0	295.4	263.7	+12.0

( ) Indicates a loss * Canadian funds

"We entered the fourth quarter with a healthy order book and anticipate operating at high levels through the end of 1987 and possibly well into next year," said Herbert Elish, president of Weirton.

Armco Inc. reported a net income of $25.8 million for the third quarter. Armco's carbon steel and specialty steel operations were profitable. Carbon steel shipments were up 21 pct.

Nonferrous

The bottom lines in the nonferrous metals industries had little or nothing to do with the bottom in the third quarter.

Gains on sales volume, due in part to higher prices as well as increased demand, produced even sharp rises in profits.

That metal producers are creatures of volume was evident in the returns for most if not all of the industry's diverse members.

The Aluminum Co. of America (Alcoa) reported a dramatic increase in profits for the third quarter—to $109.1 million from $34.1 million in the same period of 1986 in which the company was hit by a strike. Sales were up almost 26 pct for the quarter—from $1.1 billion to $1.4 billion.

Alcoa officials said the aluminum market picked up speed in the second quarter and continued to gain in the third quarter, aided by strong demand for aluminum and higher prices for many fabricated products.

Alcan Aluminium, Ltd., posted profits of $122 million for the third quarter compared to $62 million for the same period of 1986. Sales in the period were up 15 pct to $1.7 billion compared to $1.5 billion in the third quarter of 1986.

Likewise, Reynolds Metals Co. reported record third quarter profits of $62.5 million compared with $19.7 million during the third quarter of 1986.

Reynolds President William O. Bourke attributed the gains to stringent cost controls, higher volume and improved prices for primary ingot and some fabricated products.

"An extremely tight aluminum supply situation, due to the combination of strong demand with depletion of excess inventories and the permanent closure of obsolete smelters around the world has caused a sharp increase in the price of ingot since the beginning of the year," he said.

Newly renamed Kaisertech, Ltd., reported profits of $13.4 million for the latest three-month span. Company officials noted that the results included a $16.1 million gain on the sale of a food service foil and foil container business as well as a loss provision of $13.0 million for costs related to a reduction in corporate staff. The same period a year ago, the company posted a loss of $3.1 million.

The aluminum industry's net shipments for the first eight months of this year totaled 11.1 billion lbs, an increase of almost 5 pct over the total for the same span in the last year, according to the Aluminum Association. And, the biggest percentage gainer was ingot. Shipments were up 10.8 pct over the previous year's pace—2.4 billion lbs compared to 2.1 billion lbs for the 1986 period.

Copper producers have no complaints about the price. The red metal's tag has climbed throughout the year.

The strength of the market prompted two major producers to reopen idled potlines. Alcoa said it would temporarily restart three potlines at facility in Rockdale, Texas. The big aluminum producer had permanently closed three of the eight potlines there in 1985. Those closures were part of corporate-wide shutdown of older and less efficient facilities which trimmed an estimated 350,000 tons of Alcoa capacity.

Kaiser Aluminum & Chemical Corp. also announced it would reopen half of the idled potline at its Ravenswood, Va., plant. Kaiser officials attributed the restart to strong demand and favorable prices for primary aluminum.

Copper producers have no complaints about the price. The red metal's tag has climbed throughout the year. And each penny-a-pound rise can produce more than a few extra dollars in profits.

Phelps Dodge Corp., the nation's largest copper producer, reported profits of $58.2 million for the third quarter, compared to $11.1 million for the third quarter of 1986, and noted that the gain reflected better prices for copper.

Phelps Dodge Chairman G. Robert Durham stressed that point in a speech given at a metal industry gathering held a little more than a week before the company made public its third quarter results.

"In the second quarter," he said, "the Comex spot price improved to 66.2¢, and our quarterly net income improved to $25.2 million. The Comex copper price improved further, to 78.3¢, in the third quarter. And while our third quarter results are still being compiled, they should come at better than $50 million...."

By early November, copper prices were over the $1 a lb mark and showing little or no sign of weakening as users scrambled to assure supply of the material for the first quarter of 1988.

Nickel also saw its fortunes on the rise this year. Prices on the LME and Comex have climbed steadily throughout the year. Market analysts explain the gains on the rising demand from stainless steel producers, low inventories among the nickel producers and little or no excess of scrap.

Inco, Ltd., posted a $41.4 million in profits for the latest quarter compared to $3.0 in the third quarter of 1986. The big Canadian nickel producer attributed the gains to "the strongest nickel and copper markets in five years."

By George J. McManus and Michael Marley

MATERIAL PRICES

PRICE & PRODUCTION DATA

(Effective November 2, 1987)

Steel production by districts, thousands of tons (000 omitted)

	Last Week	Two Weeks Ago	Month Ago	Year Ago
Northeast Coast	277	269	260	141
Pittsburgh	193	192	183	177
Youngstown	121	120	112	112
Lake Erie	153	150	149	109
Detroit	155	160	162	148
Chicago	502	495	515	341
Midwest	206	206	194	165
Southern	211	210	196	147
Western	57	56	56	43
U.S. Production	1,875	1,858	1,827	1,383

Source: American Iron & Steel Institute

Lake Superior Ore Prices

51.50% Fe Natural delivered lower Lake ports unless otherwise stated. Rail transportation, handling and unloading may be charged to buyer. Coarse ore 80¢ premium.

Pellets (per iron unit natural)..... gross-ton 58.0*
Pellets (per iron unit natural)..... gross-ton 59.4**
Pellets (per iron unit natural)..... gross-ton 72.45-86.9***
Mesabi, regular-unscreened ..... gross-ton 32.53
Mesabi, non-bessemer..... gross-ton 30.03-31.53

*58.0¢—Mineral Services, Inc. as of 8/13/85. **59.4¢—Inland Steel Mining, 1/1/85 and Pickands Mather, 8/1/85, delivered hold of vessel, upper Lake ports. ***72.45¢—Cleveland-Cliffs as of 12/30/86. 72.5¢—U.S. Steel as of 8/16/85. 86.9¢—Oglebay Norton 3/25/87, Hanna Mining 2/26/87.

STEEL PRODUCTION, COMPOSITE PRICES

(Effective November 2, 1987)

U.S. Steel Production	Last Week	Two Weeks Ago	To Date 1987	To Date 1986
Net tons, in thousands	1,875	1,858	72,689	68,152
Capability Utilization Rate	86.8	86.1	77.9	63.8

Composite Prices	This Week	Week Ago	Month Ago	Year Ago
Finished Steel Base* (¢/lb.—eff. 10/4/87)	26.002	26.002	26.002	24.951
Pig Iron** (Net ton= 2000 lbs.)	$213.00	$213.00	$213.00	$213.00
Scrap No. 1 hvy.*** (Gross ton=2240 lbs.)	$110.50	$110.50	$107.83	$ 74.17
No. 2 bundles	$ 71.83	$ 71.83	$ 71.83	$ 50.50

Scrap Comparison (Gross Ton)				
No. 1 steel, Pittsburgh	$115.50	$115.50	$115.50	$ 78.50
No. 1 steel, Philadelphia	99.50	99.50	91.50	71.50
No. 1 steel, Chicago	116.50	116.50	116.50	72.50
No. 1 bundles, Detroit	131.50	131.50	131.50	75.50
Low Phos., Youngstown	118.50	118.50	118.50	75.50
No. 1 mach'y cast., Pgh	92.50	92.50	92.50	74.50
No. 1 mach'y cast., Phila	101.50	101.50	101.50	93.50
No. 1 mach'y cast., Chi.	118.50	118.50	118.50	101.50

*Finished Steel Composite: Weighted index of steel bars, shapes, plates, wire, rails, black pipe, hot and cold rolled sheets and strip.
**Pig Iron Composite: Based on average prices for basic and foundry pig iron at representative producing points within the U.S.
***Steel Scrap Composite: Average of No. 1 hvy. melting steel scrap and No. 2 bundles delivered to consumers at Pittsburgh, Philadelphia and Chicago.

NONFERROUS PRICES

(Effective November 2, 1987) Prices obtained in trade based on representative tonnages per gross ton delivered to consumer unless otherwise stated.

Primary Metal Prices

(cents per lb.)	current price	last price	date of change
Aluminum (LME)	77.00	77.50	11/2/87
Copper (C)	90.00	88.00	11/2/87
Lead	42.00	38.00	7/6/87
Magnesium Ingot	153.00	148.00	12/9/85
Nickel (LME)	265.00	258.00	11/2/87
Zinc	43.00	45.50	9/9/87

ALUMINUM: Avg. for last week & previous week. COPPER (C)=cathode. LEAD: common grade. MAGNESIUM: 99.8% pig, delivered. NICKEL: Avg. for last week & previous week. ZINC: high grade.

Antimony, American Laredo, Texas	$2.00
Beryllium-aluminum 5% Be, per lb. contained Be	$248.00
Beryllium-copper, per lb. cont. Be	$152.00
Beryllium 97% powder 200	$196.00
Cadmium, ton lots	$1.50
Calcium, ton lots, crown	$3.92
Chromium, 99.5% electro	$4.62
Cobalt, 99%, cathode	$12.50
Gold, per troy oz.	$469.30
Indium, per troy oz.	$9.95
Iridium, per troy oz.	$350.00
Magnesium sticks, 10,000 lbs.	$2.12
Mercury, per 76-lb., f.o.b. N.Y.	$348.00
Molybdenum, lb. tech. moly oxides, 20 lb. MO can	$3.45
Palladium, per troy oz.	$118.00
Platinum, per troy oz.	$528.00
Rhodium, per troy oz.	$1,270.00
Silver ingots, per troy oz.	$6.98
Titanium sponge, melt grade	$4.00
Tungsten powder, hyd red	$9.53-9.85
Vanadium	$6.00
Zirconium sponge	$11.20-17.00

(Per lb. unless otherwise noted)

Straits Tin Price

(U.S. cents per lb. EX-SMELTER, based on daily market in Kuala Lumpur in Malaysian dollars per kilo.)

Oct. 26—307.00 Oct. 29—310.00
Oct. 27—309.00 Oct. 30—312.00
Oct. 28—311.00

Scrap Prices
Brass Mill Scrap

(Cents per lb., over 20,000 lbs. add 1¢ per lb.)

	Solids	Turnings
Copper	70	65
Yellow brass	61½	60½
Red brass	62½	58½
Comm. bronze	63	58
Mang. bronze	46	45
Free cutting rod ends	57½	56½

Custom Smelters Scrap

(Cents per lb., carload lots, del. refinery)

No. 1 copper wire	68
No. 2 copper wire	59
Light copper	53

Ingot Makers Scrap

(Cents per lb., carload lots, del. refinery)

No. 1 copper wire	60
No. 2 copper wire	52
Light copper	45
No. 1 composition	50
No. 1 comp. turnings	50
Hvy. yellow brass solids	36
Hvy. yellow brass turnings	30
Radiators	33

Dealers' Scrap

(Dealers' buying price f.o.b. New York in cents per pound)

Aluminum		
New mixed clips	54	— 55
Old sheet	48	— 49
Old cast	48	— 49
Clean dry borings	48	— 49

Aluminum		
Segregated clippings	47	— 48
Mixed I.C. clips	46	— 47
Old sheets and cast	40	— 41
Borings and turnings	35	— 36
Duraluminum clippings	40	— 41

Copper and Brass		
No. 1 copper wire	54	— 58
No. 2 copper wire	46	— 47
Light copper	43	— 44
Radiators	31	— 32
No. 1 composition	44	— 45
No. 1 composition turnings	42	— 43
Cocks and faucets	38	— 39
Clean heavy yellow brass	35	— 36
Brass pipe	40	— 42
New soft brass clippings	51	— 52

Lead		
Heavy soft lead	16	— 17
Whole batteries	2	— 3
Type metal	25	— 26
Electrotype	18	— 19

Nickel		
Nickel solids	140	—150
Nickel rod ends	148	—158
Nickel sheets, clips	148	—158
Nickel turnings	34	— 44

Zinc		
New zinc clippings	16	— 17
Old diecast zinc	12	— 13

MATERIAL PRICES

EFFECTIVE NOVEMBER 2, 1987

(Effective November 2, 1987) Prices obtained in trade based on representative tonnages per gross ton delivered to consumer unless otherwise stated. Prices are the opinions of Iron Age editors and correspondents, based on contacts with dealers, brokers, generators and users in the industry as of the effective date listed above.

Ferrous Scrap Prices

Pittsburgh

No. 1 hvy. melting	$ 115.00 to	$ 116.00
No. 2 hvy. melting	97.00 to	98.00
No. 1 dealer bundles	159.00 to	160.00
No. 1 factory bundles (auto)	159.00 to	160.00
No. 2 bundles	64.00 to	65.00
No. 1 busheling	159.00 to	160.00
Machine shop turnings	13.00 to	14.00
Shoveling turnings	48.00 to	49.00
Cast iron borings	45.00 to	46.00
Low phos. punchings plate	154.00 to	155.00
Heavy turnings	97.00 to	98.00
No. 1 RR hvy. melting	137.00 to	138.00
Rails, 2 ft. and under	162.00 to	163.00
Scrap rails, random lgth	133.00 to	134.00
RR specialties	162.00 to	163.00
No. 1 machinery cast	92.00 to	93.00
Cupola cast	84.00 to	85.00
Heavy breakable cast	30.00 to	31.00
Stainless		
18-8 bundles and solids	670.00 to	680.00
18-8 turnings	570.00 to	580.00

Chicago

No. 1 hvy. melting	$ 116.00 to	$ 117.00
No. 2 hvy. melting	112.00 to	113.00
No. 1 dealer bundles	161.00 to	162.00
No. 1 factory bundles (auto)	154.00 to	155.00
No. 2 dealer bundles	88.00 to	89.00
No. 1 busheling	144.00 to	145.00
Shredder scrap	134.00 to	135.00
Machine shop turnings	40.00 to	41.00
Mixed borings and turnings	32.00 to	33.00
Shoveling turnings	49.00 to	50.00
Cast iron borings	54.00 to	55.00
Low phos. forge crop	149.00 to	150.00
Low phos. punchings plate 1/4 in. and heavier	165.00 to	166.00
Low phos. 2 ft. and under	160.00 to	161.00
No. 1 RR hvy. melting	134.00 to	135.00
Scrap rails random lgth	125.00 to	126.00
Reroller rails	139.00 to	140.00
Rails, 2 ft. and under	159.00 to	160.00
RR couplers and knuckles	134.00 to	135.00
RR car axles	159.00 to	160.00
No. 1 machinery cast	118.00 to	119.00
Cupola cast	107.00 to	108.00
Stove plate	117.00 to	118.00
Steel car wheels	154.00 to	155.00
Stainless		
18-8 bundles and solids	630.00 to	640.00
18-8 turnings	490.00 to	500.00
430 bundles and solids	170.00 to	180.00
430 turnings	85.00 to	95.00

Philadelphia

No. 1 hvy. melting	$ 98.00 to	$ 101.00
No. 2 hvy. melting	88.00 to	91.00
No. 1 dealer bundles	132.00 to	135.00
No. 2 dealer bundles	61.00 to	64.00
No. 1 busheling	127.00 to	130.00
Shredder scrap	130.00 to	133.00
Machine shop turnings	26.00 to	29.00
Mixed borings and turnings	26.00 to	29.00
Shoveling turnings	44.00 to	47.00
Low phos. 5 ft. and under	114.00 to	117.00
Low phos. 2 ft. punchings	145.00 to	148.00
Electric furnace bundles	147.00 to	150.00
RR specialties	120.00 to	123.00
Rails, 2 ft. and under	142.00 to	145.00
Cupola cast	94.00 to	97.00
Heavy breakable cast	52.00 to	55.00
No. 1 machinery cast	100.00 to	103.00

Detroit

Brokers buying prices per gross ton on cars

No. 1 hvy. melting	$ 89.00 to	$ 90.00
No. 2 hvy. melting	87.00 to	88.00
No. 1 dealer bundles	131.00 to	132.00
No. 2 bundles	67.00 to	68.00
No. 1 busheling	129.00 to	130.00
Drop forge flashings	91.00 to	92.00
Machine shop turnings	42.00 to	43.00
Mixed borings and turnings	15.00 to	16.00
Shoveling turnings	42.00 to	43.00
Cast iron borings	38.00 to	39.00
Heavy breakable cast	40.00 to	41.00
Mixed cupola cast	57.00 to	58.00
Automobile cast	79.00 to	80.00
Stainless		
18-8 bundles and solids	600.00 to	610.00
18-8 turnings	290.00 to	300.00
430 bundles and solids	135.00 to	145.00

Youngstown

Brokers buying prices per gross ton on cars

No. 1 hvy. melting	$ 101.00 to	$ 102.00
No. 2 hvy. melting	92.00 to	93.00
No. 1 dealer bundles	141.00 to	142.00
No. 2 dealer bundles	60.00 to	61.00
Machine shop turnings	26.00 to	27.00
Shoveling turnings	26.00 to	27.00
Low phos. plate	118.00 to	119.00
Electric furnace bundles	121.00 to	122.00
Galvanized bundles	118.00 to	119.00

Cleveland

Brokers buying prices per gross ton on cars

No. 1 hvy. melting	$ 96.00 to	$ 97.00
No. 2 hvy. melting	85.00 to	86.00
No. 1 dealer bundles	141.00 to	142.00
No. 1 factory bundles	144.00 to	145.00
No. 2 bundles	56.00 to	57.00
No. 1 busheling	135.00 to	136.00
Machine shop turnings	31.00 to	32.00
Shoveling turnings	31.00 to	32.00
Cast iron borings	31.00 to	32.00
Cut structural & plates, 5 ft. and under	114.00 to	115.00
Cut structural & plates, 2 ft. and under	137.00 to	138.00
Low phos. punchings plate	140.00 to	141.00
Foundry steel, 2 ft. & under	87.00 to	88.00
No. 1 RR hvy. melting	102.00 to	103.00
Rails, 2 ft. and under	134.00 to	135.00
Rails, 18 in. and under	136.00 to	137.00
No. 1 machinery cast	88.00 to	89.00
Mixed cast	55.00 to	56.00
Stainless		
18-8 bundles	605.00 to	615.00
18-8 turnings	295.00 to	305.00
430 bundles	140.00 to	150.00

Buffalo

Brokers buying prices per gross ton on cars

No. 1 hvy. melting	$ 84.00 to	$ 85.00
No. 2 hvy. melting	74.00 to	75.00
No. 1 busheling	129.00 to	130.00
No. 1 dealer bundles	129.00 to	130.00
No. 2 bundles	41.00 to	42.00
Machine shop turnings	18.00 to	19.00
Mixed borings and turnings	18.00 to	19.00
Shoveling turnings	24.00 to	25.00
Cast iron borings	29.00 to	30.00
Low phos. plate	115.00 to	116.00
Structural and plate, 2 ft. and under	119.00 to	120.00
Rails, 2 ft. and under	134.00 to	135.00
Scrap rails, random lgth	109.00 to	110.00
No. 1 machinery cast	89.00 to	90.00
No. 1 cupola cast	77.00 to	78.00

St. Louis

No. 1 hvy. melting	$ 109.00 to	$ 110.00
No. 2 hvy. melting	99.00 to	100.00
No. 1 busheling	135.00 to	136.00
No. 1 dealer bundles	139.00 to	140.00
No. 2 bundles	94.00 to	95.00
Machine shop turnings	31.00 to	32.00
Shoveling turnings	35.00 to	36.00
Cast iron borings	41.00 to	42.00
No. 1 RR hvy. melting	119.00 to	120.00
Rails, random length	118.00 to	119.00
Rails, 5 ft. and under	129.00 to	130.00
Plate and structural, 5 ft. and under	119.00 to	120.00
Cupola cast	79.00 to	80.00
Heavy breakable cast	43.00 to	44.00
Stove plate	107.00 to	108.00
Steel car wheels	139.00 to	140.00
Rerolling rails	130.00 to	131.00
Unstripped motor blocks	60.00 to	61.00

Birmingham

No. 1 hvy. melting	$ 102.00 to	$ 103.00
No. 2 hvy. melting	95.00 to	96.00
No. 1 dealer bundles	114.00 to	115.00
No. 2 bundles	77.00 to	78.00
No. 1 busheling	114.00 to	115.00
Shredder scrap	120.00 to	121.00
Machine shop turnings	49.00 to	50.00
Shoveling turnings	59.00 to	60.00
Cast iron borings	40.00 to	41.00
Electric furnace bundles	90.00 to	91.00
Elec. furnace, 3 ft. & under	92.00 to	93.00
Structural and plate, 2 ft.	124.00 to	125.00
Structural and plate, 4 ft.	119.00 to	120.00
No. 1 RR hvy. melting	119.00 to	120.00
Scrap rails, random lgth	104.00 to	105.00
Rails, 2 ft. and under	124.00 to	125.00
Angles and splice bars	112.00 to	113.00
No. 1 cupola cast	92.00 to	93.00
Unstripped motor blocks	89.00 to	90.00

Cincinnati

Brokers buying prices per gross ton on cars

No. 1 hvy. melting	$ 98.00 to	$ 99.00
No. 2 hvy. melting	88.00 to	89.00
No. 1 dealer bundles	140.00 to	141.00
No. 2 bundles	59.00 to	60.00
Machine shop turnings	27.00 to	28.00
Shoveling turnings	30.00 to	31.00
Cast iron borings	39.00 to	40.00
Low phos. 18 in. and under	140.00 to	141.00
Rails, random length	116.00 to	117.00
Rails, 2 ft. and under	144.00 to	145.00
No. 1 cupola cast	83.00 to	84.00
Heavy breakable cast	44.00 to	45.00
Drop broken cast	93.00 to	94.00

New York

Brokers buying prices per gross ton on cars

No. 1 hvy. melting	$ 59.00 to	$ 61.00
No. 2 hvy. melting	52.00 to	53.00
No. 2 dealer bundles	35.00 to	37.00
Mixed borings and turnings	10.00 to	11.00
Machine shop turnings	4.00 to	6.00
Shoveling turnings	10.00 to	12.00
Clean cast, chem. borings	35.00 to	36.00
No. 1 machinery cast	79.00 to	80.00
Mixed yard cast	50.00 to	51.00
Heavy breakable cast	15.00 to	17.00
Stainless		
18-8 prepared solids	530.00 to	550.00
18-8 turnings	385.00 to	405.00
430 prepared solids	105.00 to	115.00
430 solids	100.00 to	110.00

Boston

Brokers buying prices per gross ton on cars

No. 1 hvy. melting	$ 65.00 to	$ 67.00
No. 2 hvy. melting	55.00 to	57.00
No. 1 dealer bundles	88.00 to	90.00
No. 2 bundles	30.00 to	32.00
No. 1 busheling	86.00 to	88.00
Shredder scrap	78.00 to	80.00
Machine shop turnings	18.00 to	20.00
Shoveling turnings	23.00 to	25.00
No. 1 machinery cast	85.00 to	87.00
Mixed cupola cast	44.00 to	46.00
Heavy breakable cast	22.00 to	24.00

San Francisco

No. 1 hvy. melting	$ 63.00 to	$ 65.00
No. 2 hvy. melting	57.00 to	59.00
No. 1 dealer bundles	54.00 to	56.00
No. 2 dealer bundles	42.00 to	43.00
Machine shop turnings	15.00 to	16.00
Cast iron borings	15.00 to	16.00
No. 1 cupola cast	82.00 to	84.00

Los Angeles

No. 1 hvy. melting	$ 61.00 to	$ 63.00
No. 2 hvy. melting	55.00 to	57.00
No. 1 dealer bundles	53.00 to	55.00
No. 2 dealer bundles	39.00 to	40.00
Machine shop turnings	12.00 to	13.00
Shoveling turnings	13.00 to	14.00
Cast iron borings	13.00 to	14.00
Elec. furnace, 1 ft. and under (foundry)	70.00 to	72.00
No. 1 cupola cast	74.00 to	76.00

Seattle

No. 1 hvy. melting	$ 83.00 to	$ 84.00
No. 2 hvy. melting	75.00 to	76.00
No. 2 bundles	59.00 to	60.00
No. 1 cupola cast	89.00 to	90.00
Mixed yard cast	80.00 to	82.00

Hamilton, Ont.

Brokers buying prices per gross ton on cars

No. 1 hvy. melting	$ 103.00
No. 2 hvy. melting, cut 2 ft. and under	90.00
No. 1 dealer bundles	131.00
No. 2 bundles	69.00
Mixed steel scrap	75.00
Bush. new fact. prep'd	126.00
Bush. new fact. unprep'd	109.00
Machine shop turnings	36.00
Short steel turnings	38.00
Mixed borings and turning	25.00
Cast scrap	105.00

Houston

Brokers buying prices per gross ton on cars

No. 1 hvy. melting	$ 92.00 to	$ 93.00
No. 2 hvy. melting	82.00 to	83.00
No. 2 bundles	50.00 to	51.00
Machine shop turnings	35.00 to	36.00
Crushed turnings	45.00 to	46.00
Shredder scrap	107.00 to	108.00
Cut structural plate, 2 ft. and under	106.00 to	107.00
Cut structural plate, 5 ft. and under	94.00 to	95.00
Unstripped motor blocks	60.00 to	61.00
Cupola cast	95.00 to	96.00